

CLAIMS

1. A method for improving the wettability of a medical device, comprising the steps of:

(a) providing a medical device formed from a monomer mixture comprising a hydrophilic monomer and a silicone-containing monomer, wherein said medical device has not been subjected to a surface oxidation treatment;

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(b) contacting a surface of the medical device with a solution comprising a proton-donating wetting agent, whereby the wetting agent forms a complex with the hydrophilic monomer on the surface of the medical device in the absence of a surface oxidation treatment step and without the addition of a coupling agent.

2. The method of claim 1 wherein said wetting agent solution comprises at least one polymer containing carboxylic acid functionality.

3. The method of claim 1, wherein the proton-donating wetting agent is selected from the group consisting of carboxylic acids, sulfonic acids, fumaric acids, maleic acids, anhydrides, and vinyl alcohols.

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4. The method of claim 1, wherein the medical device comprises in bulk formula 5 to 75 percent by weight of one or more silicone macromonomers and 5 to 75 percent by weight of a hydrophilic monomer.

4. p. 3
The method of claim 3, wherein the hydrophilic monomer is selected from the group consisting of unsaturated carboxylic acids, vinyl lactams, acrylamides, vinyl carbonate or vinyl carbamate, oxazoline monomers, and mixtures thereof.

5. p. 3
The method of claim 3, wherein the hydrophilic monomer is selected from the group consisting of methacrylic and acrylic acids, 2-hydroxyethylmethacrylate, N-vinylpyrrolidone, methacrylamide, N,N-dimethylacrylamide, and mixtures thereof.

7. A method for improving the wettability of a medical device, comprising the steps of:

(a) providing a medical device formed from a monomer mixture comprising a hydrophilic monomer and a silicone-containing monomer, wherein said medical device has not been subjected to a surface oxidation treatment;

(b) contacting a surface of the medical device with a solution comprising a wetting agent selected from the group consisting of polymers or copolymers of meth(acrylic) acid, whereby the wetting agent forms a complex with the hydrophilic monomer on the surface of the medical device in the absence of a surface oxidation treatment step and without the addition of a coupling agent.

8. The method of claim 7, wherein the wetting agent is selected from the group consisting of carboxylic acids, sulfonic acids, fumaric acids, maleic acids, anhydrides, and vinyl alcohols.

9. The method of claim 7, wherein the medical device comprises in bulk formula 5 to 75 percent by weight of one or more silicone macromonomers and 5 to 75 percent by weight of a hydrophilic monomer.

10. The method of claim 7, wherein the hydrophilic monomer is selected from the group consisting of unsaturated carboxylic acids, vinyl lactams, acrylamides, vinyl carbonate or vinyl carbamate, oxazolone monomers, and mixtures thereof.

11. The method of claim 10 wherein the hydrophilic monomer is selected from the group consisting of methacrylic and acrylic acids, 2-hydroxyethylmethacrylate, N-vinylpyrrolidone, methacrylamide, N,N-dimethylacrylamide, and mixtures thereof.

12. The method of claim 11 wherein said polymer is characterized by acid content of at least about 30 mole percent

13. The method of claim 12 wherein said polymer is characterized by acid content of at least about 40 mole percent.

14. The method of claim ~~1~~¹² wherein said wetting agent solution of step (b) comprises at least one selected from the group consisting of P(vinylpyrrolidinone(VP)-co-acrylic acid(AA)), P(methylvinylether-alt-maleic acid), P(acrylic acid-graft-ethyleneoxide), P(acrylic acid-co-methacrylic acid), P(acrylamide-co-AA), P(acrylamide-co-AA), P(AA-co-maleic), and P(butadiene-maleic acid).

12~~15~~. The method of claim 1 wherein said medical device is an ophthalmic lens.

13~~16~~. The method of claim ~~15~~¹² wherein said ophthalmic lens is a contact lens.

14~~17~~. The method of claim ~~16~~¹³ wherein said contact lens is a silicone hydrogel lens.

15~~18~~. The method of claim ~~17~~¹² wherein said contact lens is a rigid-gas-permeable lens.

19. A method for improving the wettability of a medical device comprising the steps of:

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as (a) providing a medical device comprising a silicone-containing monomer and at least one other monomer selected from the group consisting of poly(n-vinyl pyrrolidone) and poly(dimethylacrylamide), wherein said medical device has not been subjected to a surface oxidation treatment; and

(b) contacting a surface of the medical device with a solution comprising at least one selected from the group consisting of poly(acrylic acid) and poly(acrylic acid-co-acrylamide).

17~~20~~. The method of claim ~~19~~¹⁶ further comprising acidifying said solution of step (b) to provide a solution pH of less than 5.